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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/665,572	09/22/2003	Motokazu Kobayashi	03500.017565	6450

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EXAMINER	
MRUK, GEOFFREY S	

ART UNIT	PAPER NUMBER
2853	

DATE MAILED: 05/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/665,572	KOBAYASHI ET AL.	
	Examiner	Art Unit	
	Geoffrey Mruk	2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *26 November 2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Miyata et al. (US 6,109,738).

With respect to claim 1, Miyata discloses a composition (Column 11, lines 20-54) for forming a piezoelectric (Fig. 1, element 70) containing a dispersoid obtained from metallic compound (Column 11, line 47, i.e. PZT), wherein the content of hafnium contained in the composition is 3,000 ppm or less. The Examiner interprets the content of hafnium to be zero, thus Miyata anticipates the limitation in claim 1.

With respect to claim 2, Miyata discloses a metallic compound is at least one of metallic compound selected from the group consisting of organometallic alkoxides, organometallic complexes, metal organic salts and metal hydroxides (Column 11, lines 20-54).

With respect to claim 3, Miyata discloses the content of hafnium contained in said composition (Column 11, lines 20-54) is 2,000 ppm or less. The Examiner interprets the content of hafnium to be zero, thus Miyata anticipates the limitation in claim 3.

With respect to claim 4, Miyata discloses a method for producing a piezoelectric film comprising the steps of:

- coating a substrate with a composition for forming a piezoelectric containing a dispersoid obtained from metallic compound, in which the content of hafnium is 3,000 ppm or less, to form a coating film;
- drying the coating film; and
- sintering the dried coating film to obtain a piezoelectric film (Column 11, lines 38-48).

The Examiner interprets the content of hafnium to be zero, thus Miyata anticipates the limitation in claim 4.

With respect to claim 5, Miyata discloses a piezoelectric element (Fig. 1, elements 60, 70, 80) comprising a piezoelectric film (Fig. 1, element 70) held between a lower electrode (Fig. 1, element 60) and an upper electrode (Fig. 1, element 80), wherein the piezoelectric film is produced by the method of claim 4 (Column 11, lines 20-54).

With respect to claim 6, Miyata discloses the content of hafnium contained in said piezoelectric film is 3,000 ppm or less. The Examiner interprets the content of hafnium to be zero, thus Miyata anticipates the limitation in claim 6.

With respect to claim 7, Miyata discloses an ink jet recording head (Fig. 1) comprising

- a pressure chamber (Fig. 1, element 12) communicating with an ink discharge port (Fig. 1, element 11),
- a diaphragm (Fig. 1, element 50) provided in correspondence with the pressure chamber, and

- the piezoelectric element of claim 5 provided in correspondence with the diaphragm, wherein an ink in the pressure chamber is discharged through said ink discharge port by a change of volume in said pressure chamber caused by the piezoelectric element (Column 9, lines 44-59).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Miyashita et al. (US 5,751,313) discloses "Preferred examples of the fine particle of an inorganic oxide include fine particles composed mainly of an oxide of one or two or more elements elected from aluminum, zirconium, silicon, titanium, tin, indium, zinc, lead, germanium, hafnium, chromium, copper, iron, cobalt, nickel, manganese, vanadium, niobium, tantalum and molybdenum" (Column 2, lines 65-67; Column 3, lines 1-4).

Jun (JP 2002-166544) discloses an "inkjet head characterized by said electrode using 4A group's metal as a principal component" where "said metal becomes from titanium, a zirconium, and a hafnium" (paragraphs 0014-0015).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Geoffrey Mruk whose telephone number is (571) 272-2810. The examiner can normally be reached on 7am - 330pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GSM
5/3/2005

GM

5/12/05
MANISH S. SHAH
PRIMARY EXAMINER